Oregon SCIENTIFIC

msn® Direct

Complete Regional Weather Station with MSN® Direct Weather Data Service

Model: WMS801

USER MANUAL

Complete Regional Weather Station with MSN® Direct Weather Data Service Model: WMS801

USER MANUAL

CONTENTS

Introduction **1**
Product Overview **2**
Front View 2
Back View 2
LCD Display 3
Getting Started **6**
Power 6
About MSN® Direct Radio Signal 6
Change Display / Setting 7
Clock Reception **8**
Clock / Calendar **8**
Alarm **8**
Weather Forecast **9**
UVI / Barometer / Rainfall **10**
Temperature and Humidity **10**
Temperature and Humidity Trend 11
Comfort Zone 11
Heat Index 11
Dew Point 12
Wind Direction / Speed **12**
Message Display **12**
LED Indicator **13**
Moon Phase **13**
Backlight **14**
Reset System **14**
Precautions **14**
Troubleshooting **15**
Specifications **15**
About Oregon Scientific **16**
FCC Statement **17**
Declaration of Conformity 17

INTRODUCTION

Thank you for selecting the Oregon Scientific™ Complete Regional Weather Station with MSN® Direct Weather Data Service (WMS801). This product is designed to receive an FM radio signal from MSN Direct. The radio signal is decoded by the unit and transforms the data into the weather information you can view on the LCD screen. When the unit receives the MSN Direct service, its clock and time zone are set automatically for your convenience.

MSN Direct Weather Data Service covers North American Metropolitan areas for the product through 2010. For coverage maps, see www.msndirect.com/coverage.

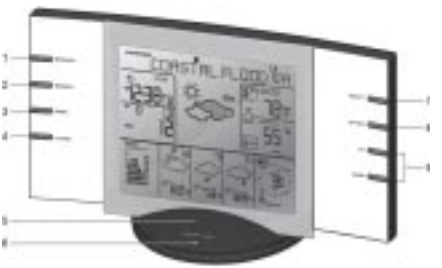
NOTE Indoor temperature and humidity are measured by the product's internal sensors.

NOTE The unit takes approximately 15 minutes to receive the MSN Direct signal. However, if the radio signal is weak, it can take up to 24 hours to get a valid signal reception.

Keep this manual handy as you use your new product. It contains practical step-by-step instructions, as well as technical specifications and warnings you should know about.

PRODUCT OVERVIEW

FRONT VIEW

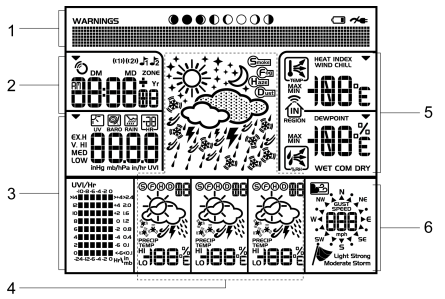


1. **MESSAGE:** View different messages
2. **MEMORY:** View current and historical readings; temperature, humidity, UV, barometer and rainfall
3. **MODE:** Change settings / display
4. **ALARM:** View alarm status; set alarm
5. **SNOOZE / LIGHT:** Activate 8-minute snooze or backlight
6. **LED indicator:** Color changes with weather message status
7. **SELECT:** Switch Areas
8. **IN / REG:** Toggle indoor and regional displays; activate auto-scan
9. **UP / DOWN:** Increase / decrease setting; enable / disable alarm

BACK VIEW

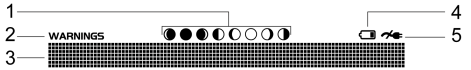
1. **AC adapter hole**
2. **°C / °F:** Selects temperature unit
3. **RESET:** Resets unit to default settings
4. **Battery compartment**
5. **mb / inHg:** Selects barometric pressure unit
6. **Antenna**

LCD DISPLAY



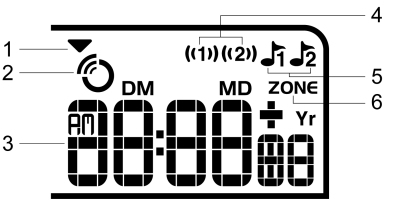
1. Weather Message Area
2. Clock / Alarm / Calendar Area
3. UVI / Barometer / Rainfall Area
4. Today's Weather and 3-Day Weather / Temperature / Humidity Forecast Area
5. Temperature / Humidity / Comfort Level Area
6. Wind Direction / Speed Area

Weather Message Area



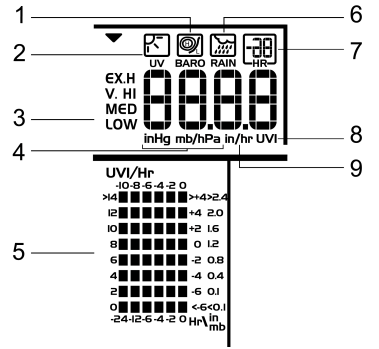
1. Moon phase
2. Warning message is displayed
3. Weather message display
4. Main unit battery is low
5. AC adapter is disconnected

Clock / Alarm / Calendar Area



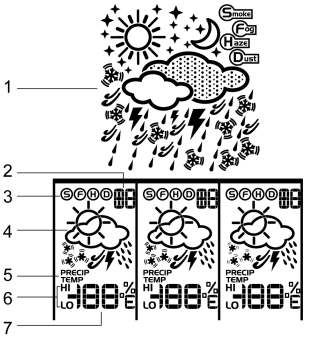
1. Selected area icon
2. Clock radio reception
3. Time / date / calendar
4. Alarm 1 or 2 is displayed
5. Alarm 1 or 2 is set
6. Offset time zone

UVI / Barometer / Rainfall Area



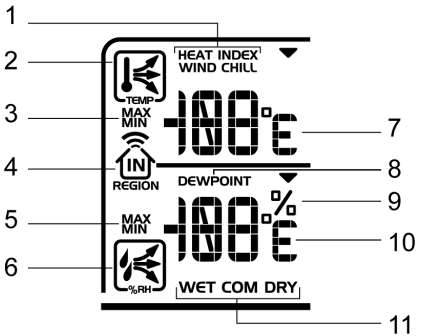
1. Barometric pressure is showing
2. UV index is showing
3. UV index level
4. Barometric pressure (in inHg or mb/hPa) is displayed
5. UVI / barometric pressure / rainfall historical bar chart display
6. Rainfall is showing
7. Hour history for UVI / barometric pressure / rainfall reading
8. UVI reading is displayed
9. Rainfall reading (inches per hour) is displayed

Today's Weather and 3-Day Weather / Temperature and Humidity Forecast Area



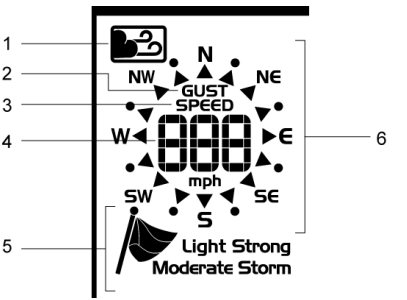
1. Today's weather forecast
2. Day of the week
3. Smoke / fog / haze / dust icon
4. Forecasted weather icon
5. Temperature or % chance of rain
6. High / low temperature reading
7. Temperature, humidity or rainfall forecast

Temperature / Humidity / Comfort Level Area



1. Heat index / wind chill level
2. Temperature trend
3. MAX / MIN temperature
4. Indoor or regional temperature / humidity is displayed
5. MAX / MIN humidity
6. Humidity trend
7. Temperature (°C / °F)
8. Dew point level
9. Humidity %
10. Dew point temperature (°C / °F)
11. Comfort levels

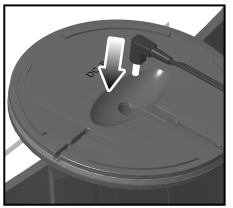
Wind Direction / Speed Area

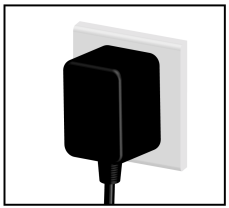


1. Gust wind speed is showing
2. Gust wind / wind speed is showing
3. Wind speed is showing
4. Gust wind or wind speed reading
5. Wind speed level with description
6. Wind direction display

GETTING STARTED

POWER





Insert batteries matching the polarity + and -. Press **RESET** after each battery change.

NOTE For longer lasting use, the AC adapter should be the unit's main source of power. The batteries are for back-up use only.

NOTE Do not use rechargeable batteries. It is recommended that you use alkaline batteries with this product for longer performance.

shows when AC adapter is disconnected.
shows when batteries are low.

ABOUT MSN® DIRECT RADIO SIGNAL

The MSN® Direct service is delivered over the Microsoft® DirectBand™ network, a wide-area network based on FM radio technology. This radio signal transmits to the unit most of the information that is displayed i.e. weather, temperature, humidity, UV, wind and local time with DST adjustment. For more information on MSN Direct, please visit www.msndirect.com.

When you insert the AC adapter or batteries, the unit will automatically start searching for the MSN Direct radio signal. While the unit is searching for a signal **"Scanning"** will appear in the Message Display Area.

Weather information shows when the signal has been received. **"Lost Link"** shows when the signal has NOT been received.

If you cannot receive a signal:

- Place the unit in a different location.
- Make sure the unit has a clear view to the sky and is away from metallic or electronic objects.
- Reposition the reception antenna.
- Force a signal search.

To force a search for the signal:

- Press and hold **IN / REG**. The unit will search for a signal for 15 minutes. If the radio signal is weak, it can take up to 24 hours to get a valid signal reception.

NOTE Signals from household devices such as doorbells, electronic garage doors, and home security systems may cause temporary reception failure. This is normal and does not affect general product performance. The reception will resume once the interference ends.

Overlapping coverage

In areas of overlapping city data coverage, the unit will automatically select data from the tower it gets the best reception from.

You may be in an area where your Weather Station can pick up signals from multiple cities. **To scan for a different city:**

- Press and hold **IN / REG**.
- **"Scanning"** displays when the Weather Station searches for an MSN Direct radio station.

To see the city where the Weather Station is receiving data from:

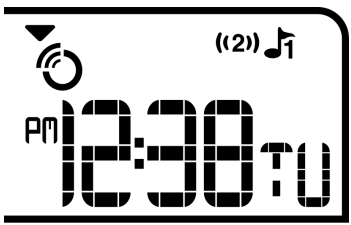
1. Press **SELECT** until ▼ is shown in the Clock area.
2. Press and hold **MODE**.

CHANGE DISPLAY / SETTING

Use the **SELECT** button to navigate between different Areas, with ▼ appearing on the display in the Area that is selected:

- Clock / Alarm / Calendar Area
- UVI / Barometer / Rainfall Area
- Temperature / Humidity / Comfort Level Area

1. Press **SELECT** to switch between Areas. ▼ indicates the selected Area.



2. Most Areas have alternate display options e.g. Clock / Alarm or UVI / Barometer / Rainfall). Press **MODE** to switch options, or **ALARM** to switch between clock and alarm.
3. Press and hold **MODE** for 2 seconds to enter setting mode.
4. Press **UP** or **DOWN** to change settings. (Press and hold **UP** or **DOWN** to quickly scroll through the values.)
5. Press **MODE** to confirm.

CLOCK RECEPTION

This product is designed to synchronize its calendar clock automatically when it receives the MSN Direct service.

Reception signal status:

TIME IS SYNCHRONIZED	TIME IS NOT SYNCHRONIZED

For best reception, the clock and antenna should be placed on a flat, non-metallic surface near a window in an upper floor of your home. The antenna should be placed away from electrical appliances and not be moved around when searching for a signal.

To enable / disable the clock radio reception (clock synchronization):

1. Navigate to the Clock / Calendar / Alarm Area. ▼ will show next to the Area.
2. Press and hold **UP / DOWN**.

CLOCK / CALENDAR

To switch between clock displays:

1. Press **SELECT** to navigate to the Clock Area. ▼ will show next to the Area.
2. Press **MODE** to toggle between;

- Clock with seconds
- Clock with day
- Calendar

To manually set the clock:
(You only need to set the clock and calendar if you have disabled the clock radio reception.)
Press **SELECT** to navigate to the Clock Area.

1. Press **SELECT** to navigate to the Clock Area. ▼ will show next to the Area.
2. Press and hold **MODE** for 2 seconds. The setting will blink.
3. Use **UP / DOWN** to change the setting.
4. Press **CLOCK** to confirm.
5. Repeat steps 3 and 4 to set the time zone offset hour (+ / -23 hours), 12 / 24 hour format, hour, minute, year, date / month format, month and day.

NOTE If you enter +1 in the time zone setting, this will give you your regional time plus 1 hour.

ALARM

The clock has 2 alarms that can be set to sound with a beep or melody alarm (5 melodies available).

To set an alarm:

1. Press **SELECT** to navigate to the Clock Area. ▼ will show next to the Area.
2. Press **ALARM** to toggle between the alarm displays and select either alarm 1 or 2, for setting.
3. Press and hold **ALARM** to enter alarm setting mode. The alarm setting will blink.

4. Use **UP / DOWN** to change the following settings: hour, minute, alarm beep or melody sound, high / low volume.
5. Press **ALARM** to confirm.

The alarm icon will appear on the display to show which alarm has been set:

ICON	MEANING
	Alarm 1/2 is set
No icons	No alarm is set

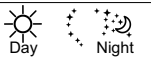
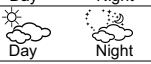
To activate / deactivate an alarm:
1. Press **ALARM** to select alarm 1 and 2.
2. Press **UP** or **DOWN** to activate or deactivate it.

To silence the alarm:
- Press **SNOOZE / LIGHT** to silence it for 8 minutes.

OR
- Press any key except **SNOOZE / LIGHT** to turn the alarm off and activate it again after 24 hours.

WEATHER FORECAST

The large, animated weather display in the top part of the screen shows the weather forecast for the next 12-24 hours. The 3 smaller weather displays at the bottom of the screen show the 3-day forecast and automatically switch between displaying:
- High / Low temperature
- % Precipitation i.e. the % chance of rain

DESCRIPTION	TODAY'S WEATHER ICON	3-DAY FORCAST ICON
Clear		
Partly Cloudy		
Cloudy		
Rain		
Snow		
Thunder		
Dust		
Fog		
Haze		
Smoke		
Windy		
Frigid		

NOTE The night time icon displays from 6PM to 6AM.

UVI / BAROMETER / RAINFALL

The UVI / Barometer / Rainfall Area displays current and historical UV, barometric pressure and rainfall measurements in a numerical and bar chart format.

To view these displays:

1. Press **SELECT** to navigate to the UVI / Barometer / Rainfall Area. ▼ will show next to the Area.
2. Press **MODE** repeatedly to select your desired display.

The following icons will appear to confirm which display you are in:

UV INDEX	BAROMETER	RAINFALL
UV	BARO	RAIN

To view the last 10 hours of the UV Index, or the last 24 hours of barometric or rainfall history:

- Press **MEMORY** repeatedly in the relevant display. The number shown in the HR box indicates how long ago each measurement was taken (e.g. 2 hours ago, 3 hours ago, etc.).

UV INDEX	DANGER LEVEL
0-2	Low
3-5	Moderate
6-7	High
8-10	Very high
11 and above	Extremely high

To select the barometer measurement unit:

- Press **mb / inHg** (in the battery compartment), to your desired setting.

The rainfall displays as inches per hour (In/hr).

TEMPERATURE AND HUMIDITY

The weather station displays indoor and regional:

1. Current, minimum and maximum temperatures and relative humidity percentages.
2. Comfort level indicator and trend line (rising, falling, or steady).
3. Heat index, wind chill and dew point level.

To view these displays:

1. Press **SELECT** to navigate to the Temperature / Humidity / Comfort Level Area. ▼ will show next to the Area.
2. Press **IN / REG** to select indoor or regional readings.
3. Press **MODE** repeatedly to toggle between the displays.

Indoor:
- Temperature / humidity / trend level indicator
- Heat index / dew point

Regional:
- Temperature / humidity / trend level indicator
- Heat index / dew point
- Wind chill factor

NOTE The dew point advises at what temperature condensation will form. The wind chill factor is based on the combined effects of temperature and wind speed.

To select the temperature measurement unit:
- Press °**C** / °**F** (inside the battery compartment), to the setting you want.

To view minimum and maximum temperature or humidity:
- Press **MEMORY** repeatedly in the temperature or humidity display.

To view the current day's high and low temperature and humidity forecast:
- Press **UP**.

To clear all records:
- Press and hold **MEMORY** for 2 seconds. A beep will sound to confirm that the memory has been cleared.

TEMPERATURE AND HUMIDITY TREND

TREND	RAISING	STEADY	FALLING
Temperature			
Humidity			

COMFORT ZONE

The Comfort Zone indicates how comfortable the climate is, based on current temperature and humidity measurements:

ZONE	TEMPERATURE	HUMIDITY
Wet	Any	>70%
Com	20-25ºC (68-77ºF)	40-70%
Dry	Any	<40%

HEAT INDEX

The Heat Index advises 4 levels of warning if the temperature is high.

DANGER CATEGORY	TEMPERATURE		FALLING
	°C	°F	
Extreme danger	>54.5	>130	Intense heat: Strong possibility of heat stroke
Danger	40.5-54.4	105-130	Very strong heat: Heat exhaustion likely
Extreme Caution	32.2-40.5	90-105	Strong heat: Possibility of dehydration
Caution	26.6-32.2	80-90	Possibility of heat exhaustion

NOTE If the temperature is below 26°C / 80°F, or the desired channel is not working, the Heat Index will display “NA”.

DEW POINT

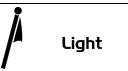
When DEWPOINT is displayed on the screen, the number below indicates the temperature at which water vapor will condense and change to liquid form.

WIND DIRECTION / SPEED

To read the wind direction find the compass point the ▲ is pointing to.

The wind speed and gust speed are displayed in miles per hour (mph) only.

The wind level is shown by a series of icons:

ICON	DESCRIPTION
	< 2 mph (~ 3 kmh)
	2-8 mph (~ 3-13 kmh)
	9-25 mph (~ 3-13 kmh)
	26-54mph (~ 42-87 kmh)
	< 55 mph (~ 88 kmh)

MESSAGE DISPLAY

The Message Display Area shows 4 general messages that continuously scroll across the display:

- Sunrise time
- Sunset time

- Current visibility
- Air quality

Additionally, if there is a specific weather message for your region, a weather alert message will display:
- WARNING
- WATCH
- ADVISORY

To view an alert message, or to scroll through existing general or alert messages:
- Press **MESSAGE**. To increase the scrolling speed, press and hold **MESSAGE**.

NOTE If the unit cannot receive MSN Direct information a **"Lost Link"** message will appear. To force a signal search, press and hold **IN / REG**.

LED INDICATOR

The LED indicator lights up to show the following:

LED LIGHT	MEANING
Solid green light	The power is on and the weather is normal
Solid red light	A WATCH or ADVISORY alert has been received by the unit
Flashing red light	A WARNING alert has been received by the unit

MOON PHASE

The Calendar must be set for this feature to work (see Clock / Calendar section). The display scrolls through all the different moon phases, stops at the current day's moon phase and then flashes it for 5 seconds.

	New moon
	Waxing crescent
	First quarter
	Waxing gibbous
	Full moon
	Waning gibbous
	Last quarter
	Waning crescent

BACKLIGHT

Press **LIGHT** to illuminate the backlight for 8 seconds.

Press and hold **LIGHT** to turn the sidelights ON / OFF.

RESET SYSTEM

Press **RESET** (in the battery compartment) to return the unit to the default settings.

PRECAUTIONS

This product is engineered to give you years of satisfactory service if you handle it carefully. Here are a few precautions:

- Placement of this product on wood surfaces with certain types of finishes, such as clear varnish, may result in damage to the finish. Consult the furniture manufacturer's care instructions for direction as to the types of objects that may safely be placed on the wood surface. Oregon Scientific shall not be responsible for any damage to wood surfaces from contact with this product.
- Do not immerse the unit in water. If you spill liquid over it, dry it immediately with a soft, lint-free cloth.
- Do not clean the unit with abrasive or corrosive materials.
- Do not subject the unit to excessive force, shock, dust, temperature or humidity, which may result in malfunction, shorter electronic life span, damaged battery and distorted parts.
- Do not tamper with the unit's internal components. Doing so will invalidate the warranty on the unit and may cause unnecessary damage. The unit contains no user-serviceable parts.
- Only use fresh batteries as specified in the user's instructions. Do not mix new and old batteries.
- Due to printing limitations, the displays shown in this manual may differ from the actual display.
- The contents of this manual may not be reproduced without the permission of the manufacturer.

NOTE The technical specification of this product and contents of this user guide are subject to change without notice. Images not drawn to scale.

TROUBLESHOOTING

PROBLEM	SYMPTOM	REMEDY
Barometer	Strange readings	Set measurement unit by pressing **mb / inHg** in the battery compartment
Calendar	Strange date / month	Change language (see Clock / Calendar section)
Clock	Cannot adjust clock	Disable clock signal reception and set the clock manually (see Clock Reception section)
	Cannot auto-synch	1. Adjust batteries 2. Press **RESET** 3. Manually activate clock signal reception
Temp	Shows “LL” or “HH”	The temperature is outside the display range of the unit
LCD screen	Displays unclearly for a short time once it has been turned off	If the adapter is plugged in and out in quick succession, the unit stores a small amount of power for a short period of time

SPECIFICATIONS

Unit dimensions (L x W x H)	263 x 127 x 150 mm (10.35 x 5.0 x 5.91 inches)
Weight without batteries	576 grams (1.27lbs)
TEMPERATURE – °C or °F	
Indoor range	-5°C to 50°C (23°F to 122°F)
Outdoor range	-62°C to 78°C (-80°F to 173°F)
Resolution	1°C (2°F)
Comfort range	20°C to 25°C (68°F to 77°F)
Memory	Min / Max
RAINFALL – In/hr	
Regional rainfall range	0-2.5 inches (0-63 mm)
WIND SPEED – Miles per hour or Kilometers per hour	
Regional wind speed range	0-254 mph (0-409 kmh)
RELATIVE HUMIDITY – %	
Indoor range	25% to 95%
Outdoor range	25% to 100%
Resolution	1%
Comfort range	40% to 70%
Memory	Min / max
BAROMETER – mb / hPa or inHg	
Regional pressure range	0 to 1935 mb
Resolution	(0 to 655.34 inHg)
WEATHER	1 mb (0.03 inHg)
Display	Sunny (day / night), partly cloudy (day / night), cloudy, rainy, snowy, thunder, dust, fog, haze, smoke, windy, frigid

CLOCK	
Synchronization	Auto or disabled
Clock display	HH:MM:SS
Hour format	12 / 24hr
Calendar	DD/MM or MM/DD;
Dual alarm	2-minute beep or melody sound (5 melodies available); high / low volume and 8-minute snooze
POWER	
• Adapter	6V AC adapter
• Batteries (for back-up use only)	4 x UM-3 (AA) 1.5V

NOTE It is recommended that you use alkaline batteries with this product for longer performance.

ABOUT OREGON SCIENTIFIC

Visit our website (www.oregonscientific.com) to learn more about Oregon Scientific products such as digital cameras; MP3 players; children's electronic learning products and games; projection clocks; health and fitness gear; weather stations; and digital and conference phones. The website also includes contact information for our Customer Care department in case you need to reach us, as well as frequently asked questions and customer downloads.

We hope you will find all the information you need on our website, however if you're in the US and would like to contact the Oregon Scientific Customer Care department directly, please visit:
www2.oregonscientific.com/service/support
OR call 1-800-853-8883.

For international inquiries, please visit:
www2.oregonscientific.com/about/international

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

WARNING Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

DECLARATION OF CONFORMITY

The following information is not to be used as contact for support or sales. Please call our customer service number (listed on our website at www.oregonscientific.com), or on the warranty card for this product) for all inquiries instead.

We

Name:	Oregon Scientific, Inc.
Address:	19861 SW 95th Ave., Tualatin,Oregon 97062 USA
Telephone No.:	1-800-853-8883

declare that the product

Product No.:	WMS801
Product Name:	Complete Regional Weather Station with MSN® Direct Weather Data Service

Manufacturer: IDT Technology Limited
Address: Block C, 9/F, Kaiser Estate,
Phase 1,41 Man Yue St.,
Hung Hom,
Kowloon, Hong Kong

is in conformity with Part 15 of the FCC Rules.
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received, including interference that may cause
undesired operation.

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086L004192-011